User Manual

（AT-2 GPS Personal Tracker)

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Introduction

The AT-2 GPS/GSM Tracker is a personal remote positioning device with built-in GPS and GSM/GPRS technology in compact size. It can transmit the longitude and latitude coordinates to your cell phone by the SMS. User could use the coordinates to find its location on the Google maps or other map software. The tracker also uploads position data to a designated server through GPRS. User can look for real-time location-tracking and historical track through the our web base server.

Applications

AT-2 GPS/GSM personal tracker mainly used on old man, children. The device built in GPS antenna, install at clear sky view place only. Do not apply to conceal installation.

Caution

Please read this handbook carefully before use the tracker

The picture in this user manual may be different with the real products. Please consult our representative for detail of engineering change

Technical Specification

Key Features:

Built-in SIRF Star III/ JRC Chipset, excellent for fixing the position even at a weak signal status. Work well under limited bad weather condition.

Built-in GSM/GPRS module, support Dual or Quad band GSM 900/1800 MHz (850/1900 Optional)

Raise alert by SMS and phone call

Get the position information via mobile phone SMS, log on to server for tracking via GPRS

Raise alert through SOS button, send out exact location for immediate rescue/action.

Portable, compact size. Low power Consumption, automatically turn off GPS once the car in static mode for 5 minutes.

Immobilize personal

Geofence fence.

Built in battery, work another 5 hours if external power being cut off

Data logger function

Upgrade latest firmware by wireless

Track by SMS with Goggle map URL link

Specification

GSM module	MTK program, GSM 900/1800/850/1900 dual-band or quad-band Support the TCP protocol
GPS Chipset	JRC high sensitive chipset
GPS sensitivity	-164dB
C/A Code	1.023MHz chip rate
Channels	210 channel all-in-view tracking
GPS frequency	L1,1575.42MHz
GPS Position Accuracy	2.5 meters,CEP
Velocity Accuracy	0.1m/s
Time Accuracy	Synchronized to GPS time
Default datum	WGS-84
Hot start	1sec.,average
Warm start	30 sec.,average
Cold Start	35 sec, average
Altitude Limit	18,000 meters (60,000feet) max.

Operating temperature	-20℃ – 65℃
Humidity	5%To 95% Non-condensing
Dimension	97 mm× 55mm× 22 mm
Voltage	12V – 24V
Average Current When stand-by	<84mA

Installation

The installation of this product suggests to operate by professional technician, to ensure the tracker install properly

Package:

1） AT-2 GPS/ GSM Tracker x 1

2） Power Cable (For Recharge) x 1

3) AC Charger x 1

4.) Battery x 1

5.) User Manual (CD) x 1

Power key
GPS LED
SOS Button
GSM LED
DC Jack
Power LED

GPS
GSI
POWER
TRAVEL CHARGER

GPS
GSM
POWER

LED Status

Blue LED--- GSM signal status

Status	Description
flash every 8s	GSM network stand by
flash every 1 sec	No GSM network or SIM card not detected

Red LED: Battery status

Status	Description
Constant light on	charging
Light off	Battery fully charge

Green LED: GPS signal status

Status	Description
Off	Not detect GPS signal
Blinding	Detected GPS signa

Quick start guideline

Tracking by SMS:

1. Put in SIM card and install device properly.
2. Set up controller phone number, send SMS command format *controller mobile phone number*0000*1** , For example *12345678*0000*1**. "12345678" is your phone number which use to send this command to tracker. “0000” is default user password, “1” is sequence of controller number.

* Device can accept command from any phone, but device only take alarm to the controller phone .

3. Request location coordinate by SMS 6680000, click on the google map URL address, browser will pop out and show device location on Google map . Your phone must be GPRS enabled, otherwise please do SMS tracking on step 4.

4. Request location coordinate by SMS 6660000, the tracker reply SMS format with Longitude and Latitude. Key in the coordinate into Google map to view the location. For example, key in "+22.54619 +114.12378" , please be careful on the space between long and lat.

Tracking by GPRS on Web

1) Insert a GPRS enabled SIM card into tracker.
2) Set up controller phone number, send sms command format *controller mobile phone number*0000*1** , For example *12345678*0000*1**. "12345678" is your phone number which use to send this command to tracker. “0000” is defaulted user password, “1” is sequence of controller number.
3) Switch on GPRS connection by 7100000
4) Setup APN, command #803#0000#APN Name#User name#password##. For the APN without user name and password, use command #803#0000#APN Name##
5) Setup database IP address, command #804#0000#61.144.222.116#2332##
6) Setup user name, #801#0000#Your SIM Number (excluded country code)##
7) Setup upload interval , #805#0000#60#1##. It upload GPS data every 60 seconds.
8) Log inhttp://61.144.222.116:8088/login.aspx with PC web browser .

* Enquire your sales representative for subscription

Setting in SMS mode

The device use SMS command to do configuration. It will reply related message once it get "instruction".

Controller phone number

Format: * controller phone number 4-20 figures * user password (4 figures) *Sequence number (1-3) **

eg: *13900000000*0000*1**

Explanation: Controller number use to manage the tracker, it is necessary to setup at least one controller number, maximum 3 number can be store. For the example above, first controller number become 139000000000

*** Device can accept setup command from any mobilephone, but the tracker will only take alarm to the controller phone.**

Switch tracker to SMS Mode

Format：700+ user password (4 figures)

eg: 7000000

Reply: SET MODE OK, CURRENT MODE: SMS P2P

Explanation：When AT-2 tracker receives the SMS and confirms the user password is correct, it switches to SMS application mode.

Change user password

Format: 777+new password (4 figures) +old password (4 figures)

eg: 77712340000

Reply: SET USER PASSWORD OK

Explanation: For the example above, change pre-setting password "0000" to new password "1234"

Power management

GPS can be set up to ON, OFF and Vibration sensor mode.

ONthe GPS

Format: 222+user password (4 figures)

eg: 2220000

Reply: GPS ON OK

Explanation: When AT-2 tracker receives the instruction and confirms the user password correctly, switch on GPS module and keep the status

OFF GPS

Format: 333+ user password (4 figures)

eg: 3330000

Reply: GPS OFF OK

Explanation: When AT-2 tracker receives the instruction and confirms the user password correctly, off the GPS. Tracker will reply confirmation messages to the sender.

Power-saving mode

The AT-2 contains a vibration sensor for power management. When the vibration sensor function do not detect personal under movement for 5 minutes, GPS function will be automatically turned off to preserve personal battery life.

Once the vibration sensor is triggered, the AT-2 will re-start the GPS location function.

Format: 100+ user password (4 figures)

eg：1000000

Reply: VIBRATION SENSOR ON OK

Explanation: When AT-2 tracker receives the instruction and confirms the user password is correct, it will start power management by vibration sensor

Request location by SMS - show longitude and latitude

Format: 666+ user password (4 figures)

eg: 6660000

Reply: Location message as below

Data format:	**Sample Message:**
Lat: Latitude (+/-)	Lat:+22.54619
Long: Longitude (+/-)	Long: +114.12378
Speed: Speed KM/H	Speed: 0.00KM/H
Direction: Direction	Direction: 315.00
Date: Date YYYY-MM-DD	Date: 2008-04-25
Time: Time HH：MM：SS	Time: 16:39:45

BS: GSM Base Station information	BS: 25ee0dff
Fix: Location state (A/V)	Fix: A (A mean received GPS signal, V mean the low GPS signal, inaccurate position)
ID: IMEI	ID: 353686009002030
STATE: Tracker Status	STATE: SMS

While GPS does not detect satelite signal, it reply SMS as below:

Eg:

ERROR GPS GPRMC FRAME DATA

BS: 27971054”

ID: 353686009002030

STATE: SMS

Request location by SMS - show Google map URL link

Format: 668+ user password (4 figures)

eg: 6690000

Reply: Location message in Google map URL link

Timer for SMS tracking

Activate timer tracking

Format: 4 xx + user password (4 figures)

eg: 4010000

Reply : TIMER START, REPEAT INTERVAK : X MINUTES

Explanation: The tracker could automatically report location message to controller phone for every X minutes. Reporting time either in minutes or hours. In the example, device will send coordinate message every 1 minute with "STATE:TIMER". Minimum value 1 minute and maximum 120 minutes

Stop timer tracking

Format: 400+user password

Reply: TIMER STOP

Raise alert my SMS or phone call

Report by SMS

Format: 150 + user password (4 figures)

eg: 1500000

Reply: SET VOICE CALL: OFF

Explanation: Setup device raise alert (ie: Geofence, panic buton etc) by SMS only.

Report by voice call and SMS

Format: 151 + user password (4 figures)

eg: 1510000

Reply: SET VOICE CALL: ON

Explanation: Setup device raise alert by SMS and voice call. Please take note that voice call only for raising alert, just hang up after you get notice. The function was activated in pre-setting

Request location by voice call

Call the tracker with controller phone. After 2-5 rings, location message will be send to the controller phone with "STATE: SMS".

SOS button（Panic button)

When press the SOS button more than 3 seconds, it will send location information to controller phone number , the information included "STATE: SOS". By the way, it call the first controller phone number. If the call not success (mobile off, out of coverage or no response), start calling the second and so on.

Geo- Fence

Geo-fence – restricting area of permitted movement. You can restrict movement to within a certain area by setting up a 'geo-fence'.

Setup Geo-fence area

A geo-fence is defined by the latitude and longitude base point of where it is and a permitted radius of travel from that point. If the personal travels outside this area the tracker will make a telephone call to the mobile phone that set the geo-fence as an alert. It will also send an SMS text including 'STATE: OS'. While it return to Geo-fence area, it raise same alert with "State:RS". The tracker will repeat the above when the personal re-enters the geo-fenced area.

Command 1: Setup Geo-fence base point on certain Long and Lat.

Find the base point in google map, record the longitude and latitude

Now send the text command which includes the personals current location;

Format 1: 004+ user password E/Wddd.dddddN/Sdd.dddddRzzz.z

e.g: 0040000E11406.0024S2233.4230R1.0

Explanation: E-- east longitude (+) ; W-- west longitude (-); N-- north latitude (+); S-- south latitude (-). In this example, uses E and N, please according to the actual geographical position choose corresponding coordinate form to set.

Command 2: Take current location as Geo-fence base point

Format: 005+user password+Rzzz.z

E.g: 0050000R1.0

Reply: SET GEOFENCE OK

Explanation: In the example, it take current location as base point, radius 1.0km as geo-fence area

Turn On/Off Geo-fence alert

To turn the geo-fence on, send the text command: 211 (Function) + password

For example: 2110000

Reply: GEO-FENCE ON

Turn geo-fence off, send the text command: 210 (Function) + password

For example: 2100000

Reply: GEO-FENCE OFF

Once the tracker out of restricted area, it will send location SMS to controller phone, STATE: RS

Battery low voltage alert

While device detect internal battery is low power, it will send coordinate message with STATE:LP.

GPRS Mode

In this mode, AT-2 will send location info to server through GPRS by a specific interval. Data transfer by TCP/I.P

Switch to GPRS mode

Format：710+ user password (4 figures)

eg：7100000

Reply: SET MODE OK, CURRENT MODE：GPRS

Explanation: When AT-2 tracker receives the SMS and confirms the user password is correct, device upload location and personal status by GPRS string.

Set up the access point name (APN)

Format1：#803#user password#APN##

eg：#803#0000#CMNET##

Format 2：#803#user password#APN#APN user name#APN password ##

Reply: SET GPRS ACCOUNT OK

Explanation: Setup APN with Format 1 while that is no APN user name and password require for your mobile network. Use Format 2 while you need input user name and password to connect APN

Note: APN become CMNET after factory reset. APN is characters composed by 3 to 35 alphabetic, numeric, dots (.) underscore (_) and connectors (-). APN user name and user password are respectively characters composed by 3 to 20 the numeric and alphabetic.

Set up TCP/IP server IP address and port number

Format：#804#user password#fixed IP address # port ##

eg ： #804#0000#220.165.9.225#2332##

Reply: SET SERVER IP AND PORT OK

Explanation: Setup server location for GPRS data transmission.

Start upload the location by GPRS

Format：#806#user password##

eg : #806#0000##

Reply:START GPRS UPLOAD

Explanation: Start data transmission to server.

Data upload Interval

Data upload interval :

Format：#805#user password# T #N#

eg：#805#0000#30#2##

Reply: SET GPS SAMPLING TIME AND QUANTITY OK

Explanation: For the example above, the tracker collect position data every 30 second , upload data to server every 2 data collected (1 minutes once). Data collection interval 'T' , minimum 10 seconds , maximum 59999 second. Data upload to server while N units of coordinate collected, minimum value is 1, maximum 50.

Data logger

Activate data logger function

Format: #807#user password#X##

Eg: #807#0000#5##

Reply: SET SAMPLING OK

Explanation: For the example above, device save location data to internal memory every 5 seconds. The device could save latest 864 location. When device start power saving mode, it will stop record data.

Upload data to server

Format: #808#user password#Upload data for previous X hours##

Eg: #808#0000#24#

Reply: START UPLOAD 24H HISTORY RECORD

Explanation: Device start upload previous 24 hours data to server

Upgrade device by GPRS

Format: !-user password

Reply: None

Explanation: Device connect to Udrivetec FTP server and upgrade latest firmware

Eg: !-0000

Appendix: Command List

Command	Sample	Description	Reply
*controller phone number 4-20 figures * user password (4 figures) *Sequence number (1-3) **	*13900000000*0000*1**	Set controller phonr number	SET USER NUMBER 1 OK
700+Password	7000000	Start SMS tracking mode	SET MODE OK, CURRENT MODE: SMS P2P
710+Password	7100000	Start GPRS tracking mode	SET MODE OK , CURRENT MODE : GPRS
004+PasswordE/Waaa.aaaaaN/Sbb.bbbb Rzzz.z	0040000E11406.0024S223 3.4230R1.0	Set geo-fence base point	SET GEOFENCE OK
005+PasswordRzzz.z	0050000R1.0	Set current location as geofence base point	SET GEOFENCE OK
010+Password	0100000	Not raise alert while power source being cutted off	DEFENCE OFF
011+Password	0110000	Raise alert while power source being cutted off	DEFENCE ON
100+Password	1000000	Power saving mode	VIBRATION SENSOR ON OK
150+Password	1500000	Raise alert by SMS	SET VOICE CALL: OFF
151+Password	1510000	Raise alert by voice call and SMS	SET VOICE CALL: ON
210+Password	2100000	Off geo-fence alert	GEO-FENCE OFF

211+Password	2110000	On geo-fence alert	GEO-FENCE ON

222+Password	2220000	On GPS receiver	GPS ON OK
333+Password	3330000	Off GPS receiver	GPS OFF OK
4xx+Password	4010000	Timer for SMS tracking	TIMER START, REPEAT INTERVAK : X MINUTES
666+Password	6660000	Request location by SMS	Coordinate message
668 +Password	6680000	Request location by SMS with Google Map Link	Coordinate message
777+New Password+Old Password	77712340000	Change Password	SET USER PASSWORD OK
#807#password#X##	#807#0000#10##	Start data logger function, record location message every x seconds	SET SAMPLING OK
#808#0000#**X**##	#808#0000#24##	Upload data in data logger to server	START UPLOAD **X**H HISTORY RECORD
#803#Password#APN##	#803#0000#internet##	Set APN	SET GPRS ACCOUNT OK
#803#Password#APN#APN	#803#0000#internet#guest	Set APN user name	SET GPRS ACCOUNT OK

username#APN pssword##	#guest##		
#804#Password#server's IP#port##	#804#0000#220.165.9.225 #2332##	Set GPRS tracking sever's IP and port	SET SERVER IP AND PORT OK
#805#Password#Save GPS data every “ T ” seconds#Upload data to server after "N" units message saved##	#805#0000#30#2##	Interval of GPS data upload to server while engine started	SET GPS SAMPLING TIME AND QUANTITY OK
#806#Password##	#806#0000##	Start upload GPRS data	START GPRS UPLOAD
#809#Password#Save GPS data every “T” seconds#Upload data to sercer after	#809#0000#1800#1##	Interval of GPS data upload to server while engine stopped	GPRS REPORT SAMPLING 2 STOP
*RESET#password##。	*RESET#0000##	Reset to default setting	
*RESTART#password##	*RESTART#0000##	Restart device	
*GTAS#	*GTAS#	Read all setting	Setup details